

CLAIMS

1. A power transmission device comprising :

5 a first transmission member rotatably attached at a boss portion of a housing of a compressor ;

a second transmission member fixed to an end portion of a rotary shaft passing loosely through the boss portion ;

a first pin mounted on one of the first transmission member and the second transmission member ;

10 a second pin mounted on the other of the first transmission member and the second transmission member ; and

a coupling member coupling the first pin with the second pin to transmit power from the first transmission member to the second transmission member and cutting off the power transmission when a torque load applied to the first pin exceeds a given value, wherein the coupling member comprising :

a pair of sidepiece portions disposed parallel to each other ;

20 a pair of bent portions having free ends, basic ends joined integrally to first ends of the sidepiece portions respectively and sandwich portions supporting the first pin by sandwiching, wherein each of the sandwich portions comprising :

plural projections disposed at regular intervals one another in a circumferential direction of the first pin and contacted with the outside circumferential surface of the first pin ; and

25 plural surfaces each disposed between the adjacent

projections and opposed to the outside circumferential surface of the first pin at a regular distance ; and

a curved portion having both ends joined integrally to second ends of the sidepiece portions respectively and a hole through and
5 into which the second pin is passed and fitted,

wherein the first pin is sandwiched between the sandwich portions by inserting the first pin into a spacing between the sidepiece portions and then pressing the first pin toward the bent portion side to deform the bent portions in a direction away from each other and

10 the first pin is released from the coupling member when the torque load applied to the first pin exceeds a given value.

2. The power transmission device according to the claim 1, wherein the projection is point-contacted with the outside circumferential surface of
15 the first pin in the plan view.

3. The power transmission device according to the claim 1, wherein the projection is line-contacted with the outside circumferential surface of the first pin in the cross-sectional view.

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4. The power transmission device according to the claim 1, wherein curvature of the surface is larger than that of the first pin in the plan view.

5. The power transmission device according to the claim 1, wherein
25 the projection is formed in the round shape in the plan view.

6. The power transmission device according to the claim 1, wherein the sidepiece portions, the bent portions and the curved portion all elastically deform when the first pin is released from the sandwich
5 portions.

7. The power transmission device according to the claim 1, wherein the sidepiece portions, the bent portions and the curved portion all plastically deform when the first pin is released from the sandwich
10 portions.

8. The power transmission device according to the claim 1, wherein a distance between the sidepiece portions is larger than a diameter of the first pin
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9. The power transmission device according to the claim 1, wherein a distance between the projections respectively located on the basic end sides of the bent portions is longer than that between the projections respectively located on the free end sides of the bent portions.
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10. The power transmission device according to the claim 1, wherein the distance between the projections respectively located on the basic end sides of the bent portions is longer than that between the projections respectively located on the free end sides of the bent portions under the
25 condition where the sandwich portions support the second pin by

sandwiching.

11. The power transmission device according to the claim 1, wherein
an inside surface of the sidepiece portion is smoothly joined to the
5 projection located on the basic end side of the bent portion.

12. The power transmission device according to the claim 1, wherein
each sandwich portion further comprises a holding surface configured to
extend from the projection located on the free end side of the bent portion.

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13. The power transmission device according to the claim 1, wherein
the coupling member is arranged at a regular angle apart from the adjacent
ones.

15 14. The power transmission device according to the claim 1, wherein
the coupling member is arranged between the first transmission member
and the second transmission member.

15. The power transmission device according to the claim 1, wherein
20 further comprising a linking means pressing the coupling member against
one of the first transmission member and the second transmission member.

16. The power transmission device according to the claim 1, wherein
force acting from the first pin to the coupling member is maximized when
25 the coupling member crosses at a right angle to the radial direction of the

rotary shaft.

17. A method for manufacturing a power transmission device, comprising the steps of :

5 fitting a first pin into a hole of a coupling member wherein the first pin is mounted on one of a first transmission member and a second transmission member ;

inserting a second pin into a spacing of the coupling member wherein the second pin is mounted on the other of the first transmission
10 member and the second transmission member ;

fastening the transmission member on which the first pin is mounted ; and

sandwiching the second pin between sandwich portions of the coupling member by rotating the transmission member on which the
15 second pin is mounted to move the second pin toward an open end side of the spacing.

18. A compressor comprising :

a housing ;

20 a boss portion formed at end portion of the housing ;

a rotary shaft passing loosely through the boss portion ; and

a power transmission device transmitting deriving force of an engine to the rotary shaft, wherein the power transmission device comprising :

25 a first transmission member rotatably attached at the

boss portion ;

a second transmission member fixed to an end portion of
the rotary shaft ;

a first pin mounted on one of the first transmission
5 member and the second transmission member ;

a second pin mounted on the other of the first
transmission member and the second transmission member ; and

a coupling member coupling the first pin with the second
pin to transmit power from the first transmission member to the second
10 transmission member and cutting off the power transmission when a
torque load applied to the first pin exceeds a given value, wherein the
coupling member comprising :

a pair of sidepiece portions disposed parallel to
each other ;

15 a pair of bent portions respectively having free
ends, basic ends joined integrally to first ends of the sidepiece portions
respectively and sandwich portions supporting the first pin by sandwiching
wherein each of the sandwich portions comprising :

plural projections disposed at
20 regular intervals one another in a circumferential direction of the first pin
and contacted with the outside circumferential surface of the first pin ; and

plural surfaces each disposed
between the adjacent projections and opposed to the outside
circumferential surface of the first pin at a regular distance ; and

25 a curved portion having both ends joined

integrally to second ends of the sidepiece portions respectively and having a hole through and into which the second pin is passed and fitted,

wherein the first pin is sandwiched between the sandwich portions by inserting the first pin into a spacing between the sidepiece portions and then pressing the first pin toward the bent portion side to
5 deform the bent portions in a direction away from each other and

the first pin is released from the coupling member when the torque load applied to the first pin exceeds a given value.